ABSTRACT

A high-strength, high-permeability steel sheet for picture tube band comprises, in mass percent, C : 0.003 – 0.010%, Si : 0.5 – 1.0%, Mn : 1.0 – 2.0%, P : 0.04 – 0.15%, S: not more than 0.02%, Al: not more than 0.030%, N: not more than 0.004% and the balance of Fe and unavoidable impurities, has a chemical composition satisfying $C \times Mn \times P \geq 2.5 \times 10^{-4}$, and has a ferrite crystal grain diameter of 10 – 100 μm and a yield stress of 300 N/mm^2 or higher, and preferably has a specific permeability μ0.35 in a DC magnetic field of 0.35 Oe of 400 or higher. The steel sheet can be produced by regulating the hot-rolling coiling temperature to 600 – 700 °C and selecting an appropriate combination of the cold rolling reduction ratio and a final annealing temperature in the range of 750 – 900 °C. Zn-system or Al-system plating can be applied. In addition, temper rolling of not greater than 1.5% can be applied.